

## 3. Survival and Urgent Care

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This chapter introduces the fundamentals of aircrew survival, and is not meant to make you a survival expert. *Your most important survival tool is your attitude* -- having a positive mental attitude is often the difference between life and death in a survival situation.

Fundamental knowledge varies from region to region, depending on terrain, weather or other unique circumstances. When flying, pack for the worst-case scenario. If you depart Houston (flat, hot, humid) for Alpine (mountainous, cool, dry), you must prepare for the *entire* flight and include the items that you may need should an incident occur.

Preparation is important, and something you control. The aircraft should have a survival kit -- how long has it been since you inspected its contents? Are the flashlight batteries dead or corroded? Are medicines past their expiration date? Is it still packed for summer, even though it's January?

Also, everyone on board should know the location of the ELT and know how to activate it manually. They should know how to fashion a basic antenna for the ELT.

Finally, take advantage of modern technology and carry a cell phone with fresh batteries. You may not get a signal in remote areas, but most accidents occur near civilization so the odds are with you.

### ***OBJECTIVES:***

1. Discuss basic post-crash actions. {S; 3.1}
2. Concerning survival equipment (aircraft & personal), discuss: {S; 3.2}
  - a. The importance of water.
  - b. Types of signaling devices (CLASS).
  - c. Basic survival equipment.
3. Concerning urgent care, discuss: {S; 3.3}
  - a. The four most important measures (moving the victim, airway, pulse and bleeding).
  - b. Post-urgent care directions.

### 3.1 Post-crash Actions

In the event of an off field landing (OK, OK, a crash), there are some basic actions you need to take. Before the off field landing, follow the aircraft checklist; it will have the crew prop open doors (headsets work nicely), tighten seatbelts and shoulder harnesses, secure loose items, and turn off electrical equipment and fuel. If the doors become jammed, kick them open or kick out the windows; it is also possible to exit through the baggage door.

Familiarize yourself with how the front seats move, paying particular attention to the left seat-rail latch. Neither front seat can be moved from the rear seat, so it is important to agree on the sequence of events for emergency egress (this should be briefed during pre-flight). Also discuss what to do if one or more of the crew is incapacitated.

After the controlled off field landing, get clear of the aircraft if there is any danger of fire or a chance that the aircraft may fall on you. Check everyone for injuries and apply first aid. As a precaution, treat yourself for shock by sipping water.

Once the immediate danger has passed, you need to consider rescue. Hopefully, you were able to communicate your position. In either case, don't get impatient and leave the site -- *your best chance of discovery is to stay with the aircraft.*

Try your cell phone. If that doesn't work, activate the ELT.

Finally, if rescue is not immediately expected, consider what you are going to do about water, shelter, and food (in that order). If you don't panic, you should survive. Remember that *your will to survive is your greatest asset.*

### 3.2 Survival equipment

Water is your most important survival resource. If you fly over regions where water is plentiful, have some means to purify water such as a filter or purification tablets or carry a metal cup for boiling water.

Signaling equipment is also a must. For daytime use, nothing beats a signal mirror (in a pinch, you can use a CD or a mirror). For nighttime, a beacon or strobe works well, but nearly anything that produces light will do. Personal ELTs are also becoming popular.

If you have no signaling device and you need to improvise one, use the CLASS acronym:

- Color: Make it an unnatural or highly contrasting one (not one you see in nature).
- Location: Put it where it can be seen most easily, usually high and open areas.
- Angles: These do not appear in nature, so it can be noticed.
- Size: Large enough to be seen from the air (at least twelve feet in height).
- Shape: Eye-catching.

Put ten people into a room and ask what should be in a survival kit. Come back a week later and they will still be fighting. There are many good articles (and even books) on the subject, so please study the topic and come to a consensus among your aircrew members.

Some areas, particularly mountainous, desert or coastal areas, have very special needs (and some requirements, like for the equipment required for over water flight beyond gliding distance of land). These are not discussed here.

That said, as a *minimum* an aircraft survival kit should contain:

- Water (or purification tablets or a filter).
- Signal mirror.
- Space blankets (one for each crewmember).
- Rations like MREs (Meal Ready to Eat).
- First aid kit and manual.
- Survival manual (written for your region).
- Matches.
- Compass.
- Knife.

It's a very good idea to carry a personal survival kit. There is no official definition for the items in such a kit, but the following list contains important items:

- Multi-function tool (e.g., *Leatherman*) that includes knife blades and needle-nosed pliers with side cutters.
- Pocket compass.
- Match safe with matches.
- Plastic or metallic container.
- Sewing needles and thread.
- Chapstick and sun block lotion, SPF 30 or greater.
- Bar surgical soap or hand soap containing physohex.
- Small shelter.
- Personal medicines.
- Water purification tablets or water filter.

In addition, here are some good-to-have items:

- Pen-gun and flares.
- Colored cloth or scarf for signaling.
- Plastic water bottle.
- Flexible saw (wire saw).
- Travel razor.
- Small steel mirror.
- Aluminum foil.

Remember, survival items will do you no good if they are out of date, spoiled, or inoperable. Check the kits periodically and replace items as necessary.

### **3.3 Urgent care**

Per CAPR 60-3 Chapter 1, CAP is not an emergency medical care or paramedic organization and will not be the primary provider of medical support. The only type of medical aid that should be administered by CAP personnel or by

any other person at CAP's request is reasonable urgent care deemed necessary to save a life or prevent human suffering. Approximately 60% of those who survive an aircraft crash will be injured.

However, if you are prepared to help others you will be better able to care for yourself in case of injury. Even if your condition is so bad that you are unable to care for yourself, you may be able to direct others in the correct procedures. Here are the most important measures to take in the event of an accident, *assuming you have the proper training*:

- Do not move the person unless it is absolutely necessary to save a life (e.g., fire, smoke or noxious fumes, falling, or flooding).
- Ensure the victim has an open airway and give mouth-to-mouth artificial respiration if necessary.
- Check for a pulse and give CPR if necessary.
- Locate and control severe bleeding.

The following procedures provide additional directions once emergency measures have been taken to ensure victim's safety:

- Do not move the victim unless it is necessary for safety.
- Do not let the victim get up and walk around.
- Protect the victim from unnecessary manipulation and disturbance.
- Avoid or overcome chilling by using blankets or covers.
- Determine injuries and administer required urgent care.
- Plan actions according to the nature of injury, the needs of situation and the availability of human and material resources.
- Remain in charge until the victim can be turned over to qualified persons.
- Do not discuss the victim's condition with bystanders or reporters.
- Know the limits of your capabilities and make every effort to avoid further injury to the victim in your attempt to provide the best possible emergency care.